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THE

NERVOUS ORIGIN OF JAUNDICE.

Read before the New York Neurological Society.

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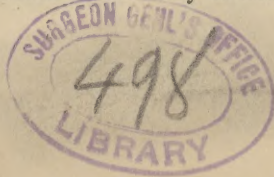
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THE NERVOUS ORIGIN OF JAUNDICE.

IT is well known that disturbances of the brain, both organic and functional, may very seriously interfere with the functional activity of distant organs. Without questioning the well-attested fact that many of the cerebral hystero-neuroses or hystero-psychoses are directly dependent upon uterine or ovarian disease, it is equally true that a cerebral disturbance may be the direct causative factor of very persistent derangements of the sexual apparatus. The bladder, intestines, stomach, and heart may also be disordered by diseases of the central nervous system, and so also may the kidney and the liver. Then, again, so closely and so strangely are the vascular and the general nervous system related to each other that their pathological conditions are often inseparably connected. The nervous system of vegetative life, as it is sometimes called (the pneumogastric, the great sympathetic, including the vaso-motor system of nerves), has an alliance so close with the functional activity of the secretory and excretory glands of the body that emotional disturbances, according to their character, act as depressants or excitants of the functional life of these organs.

Some of the more common of these effects are every-day familiar facts, as when the flow of tears is excited through grief, or the secretion of the saliva and gastric juice through the smell of food. On the other hand, the salivary secretion may be at once arrested through sudden fear, and under the influence of supreme grief there is often a complete arrest of the function of the lachrymal gland. I remember once to have witnessed a most interesting example of the profound effect of suppressed emotion in causing and perpetuating pain.

This patient had lost her husband, to whom she was devotedly attached. She had for some months previously suffered from a mild form of facial neuralgia, but immediately after the death of her husband it assumed a most severe type, and for two weeks she suffered excruciating agony. During this time she shed no tears, and on one occasion, taking note of this fact, I said to her that this suppression of all outward emotion was the very worst thing that could possibly happen, and that if she would give way to her grief the neuralgia would in all probability be greatly alleviated. At this she burst into a copious flood of tears, and from that time she suffered no more. Now, just as these superficial and easily-excited



glands—the lachrymal and submaxillary—are influenced by emotional causes through the nerves supplying them, so in all probability are the blood-making or ductless glands in great measure regulated and controlled by the organic nervous system. Diseases of the supra-renal capsules—diabetes, leucocythæmia, and other forms of malnutrition—are admittedly due to perversion of the functional activity of the several blood-making organs, which are so intimately linked, through the great sympathetic system, with sensory impressions referable to the cerebro-spinal system. Equally, and perhaps even to a greater extent, nervous influences are prone to affect the function of the liver.

Dr. Murchison, to whom the world is so indebted for enlightenment on this subject, fully appreciated the influence of the nervous system upon the secreting organs. He asserted that not only was the secretion of the bile interfered with by prolonged mental anxiety, worry, and incessant mental exertion, but that the process of sanguification and blood-change in which the liver takes part were frequently deranged from these same causes.

Murchison says that “acute atrophy, in which the secreting cells are rapidly disintegrated and the functions of the organ arrested, appears in many instances to have a purely nervous origin, and very often the first symptoms of the disease have occurred immediately after a severe fright or an outburst of passion in a person previously healthy.”

An impression made upon the brain appears to be reflected to the liver and deranges its nutrition. Even cancer of the liver appears sometimes to result from the functional derangement induced in the first instance by mental trouble. Dr. Budd, a keen observer, wrote that “Another condition that seems to me to have great influence on the production of gall-stones, or at least of biliary gravel, is mental anxiety or trouble.”

Clinical experience, therefore, and our knowledge of the intimate relationship between nutritive centres and the various organs of the body, render it quite certain that any variation of its normal activity may pervert the functional activity of distant glands with which they are related.

With jaundice due to some mechanical impediment to the flow of bile through the hepatic duct we have manifestly nothing to do in this presentation, but with some of the causes, other than mechanical, of this not infrequent affection our line of thought directly interests us.

For one not in general practice I have had occasion to see and treat a considerable number of cases of jaundice dependent upon a great variety of causes, and have been impressed with the frequent occurrence of cases due to deranged innervation interfering with the normal metamorphosis of the bile. The old theory—the theory of Boerhaave and Morgagni—that jaundice was merely the result of a suspended secretion, that bile was formed in the blood, and that the function of the liver was to separate the bile *from* the blood, seems now to have little to commend it, and we must seek some explanation other than a suppression of the hepatic functions. According to Professor Frerichs, the bile-acids manufactured in the liver,

or the larger proportion, are absorbed either by the biliary passages or by the mucous membrane of the bowel, and thus enter the circulation. The bile, as well as the fluids from the gastric and intestinal glands, are thus absorbed, secreted, and again reabsorbed, becoming adapted through constant metamorphosis for the repair of tissue; while much of it, becoming finally oxidized, is eliminated by the various excretory organs of the body.

The taurin found in healthy lung and the pigment in healthy urine are evidences of these normal metamorphoses. If, however, through the entrance of poisons into the blood, through a deficient supply of oxygen, as in some cases of pneumonia, or where persons are habitually confined in small and ill-ventilated habitations, or where there is obstinate constipation with excessive secretion of bile, and, finally, when the individual has been subjected to extreme nervous influences, such as fright or rage, and especially the depressing influences of great grief and anxiety, the proper oxidation of the bile-acids is interfered with, bile-pigment appears in the blood, and jaundice results. According to my own experience there is little to differentiate in the diagnosis between jaundice the result of purely nervous agencies and where it results from the various other non-mechanical causes, without it is the more sudden onset of the discoloration in the former class of cases. Jaundice from both obstructive and nervous causes are alike in the suddenness with which the symptoms frequently appear. A thorough history of the case will, however, generally enable us to determine whether the exciting cause is of a nervous or non-nervous character. As between jaundice from mechanical and non-mechanical causes, it is the common observation that the discoloration of the skin is much more intense in the former than in the latter. If, however, the obstruction becomes permanent, the complexion to a certain extent clears up, from the fact that the bile becomes diminished in quantity because of a progressive destruction of the secreting tissue of the liver. Another point of differential diagnosis between the two main divisions of jaundice is in the entire absence of bile in the fæces in obstruction of the biliary ducts, while in the non-mechanical cases bile is usually discharged with the passages. I have selected from some twenty-three cases of jaundice which have come under my personal observation and treatment three which mainly form the basis of the foregoing remarks, and which I propose to relate in no great detail.

These three cases seemed to be of distinctly neurotic origin, and two of them indicated a very interesting hereditary tendency.

Mr. B., aged fifty-three, a lawyer of excellent attainments and a hard worker, consulted me in March, 1888. That he was suffering from jaundice was evident on first sight and without a word of explanation. He was not constipated, nor were his stools greatly changed in color or unusually offensive. He suffered no pain, nor had he from the beginning; only a want of energy and a vague, indefinable sense of physical discomfort, associated with mental depression and a deplorable lack of mental vigor. This is his somewhat laconic but forceful description of himself: "I am a ner-

vous man and always have been ; my father before me and my mother too. When a child I had St. Vitus's dance, and when I grew up I was afraid of everything."

It seems that at one time in his life morbid fears of various kinds had greatly distressed him, indicating a functional depression of the nervous system that rendered him for several years incompetent and inadequate for the duties of life. His success had indeed been greatly retarded by this excessive timidity. To a considerable extent, however, he gradually overcame these natural and inherited defects, and has been able to pursue the work of his profession satisfactorily. A short time before his visit to me he was feeling as well as at any time in his life, when an unfortunate occurrence that entailed disgrace upon a member of his family produced an effect from which he found it difficult to rally. A few nights after the shock alluded to he retired with feelings of great depression. He was restless and somewhat flighty during the night, but towards morning he slept profoundly for several hours. While still asleep his wife noticed a strange discoloration of the skin, and when he awoke, about eight o'clock, the jaundiced condition of both the conjunctivæ and skin was very marked.

Taking into consideration the sudden onset of the jaundice, the absence of constipation, the natural appearance of the discharges, the excellent condition of the digestion, together with the neurotic history of the patient and the cause that so disturbed his mind, it seemed to me quite evident that the interruption of the normal metamorphosis of biliary secretion was directly due to nervous agencies. It is well understood that nervous tendencies are transmitted from generation to generation, and that in various branches of a family a certain vulnerability of the nervous system prevails, rendering its members liable, not necessarily to the same disease, but to some one of a group of diseases that has for its basis the neurotic habit. Hereditary or family tendencies along the line of visceral disturbances found an interesting exemplification in the two other cases, upon the observation of which these remarks were suggested.

G. F., aged nineteen, belonged to a family whose whole history indicated an extraordinary tendency. His grandfather had been an inmate of an insane asylum during the latter part of his life. His father had been for years a typical neurasthenic, and in 1875 had been under the care of the late Dr. Beard, and subsequently came under my observation. His mother was an exceedingly nervous woman, as I myself can testify from repeated interviews, and a few years before the present patient came under my care I had treated a younger sister for well-marked chorea.

This patient (G. F.) came to me one morning, presenting a well-marked example of jaundice. The yellow stain extended all over the body, and was particularly deep under the hair of the head. The stools were natural in appearance, and there was no constipation and no unusually offensive odor. He complained of weakness, heaviness of head, and mental dulness, but suffered no pain. The attack was sudden.

The patient had been feeling in his usual physical health, but for some weeks had been more or less anxious and nervous on account of an approaching scholastic examination. Once before he had failed, much to his mortification, but on this second occasion he felt well equipped and reasonably confident of success. He was, notwithstanding, again rejected, and the revulsion of feeling that he experienced was extreme. It rendered him sleepless, with loss of appetite and profound mental depression.

He received news of his failure to pass on Wednesday, and on the following Friday he observed the discoloration of the skin. It was but a short time after this that the sister of this young man—the same whom I had treated for chorea in her childhood—came to me suffering from a headache that was quite persistent. Upon closer examination I easily detected a yellow tint to the conjunctivæ, which gradually deepened during the next few days, until finally the skin became unmistakably discolored. I could trace back these symptoms to no special nervous cause, excepting the deep and very manifest sympathy with her brother and her very great disappointment at his failure, but that the remote causative factor was the distinct nervous diathesis that prevailed in this family admitted it seemed to me of no dispute.

In regard to the functions of the liver, however, it has now come to be well understood that disorders of the secretion of bile are by no means the most important.

Disorders of its metabolic function frequently result in absolutely incurable disease, and in some respects the most serious to which the human system is liable.

One of the most interesting things to the neurologist connected with faulty albuminoid disintegration is the striking similarity of the symptoms of neurasthenia with some of the manifestations of lithæmia.

Now, while gout and the lithæmic condition generally is in the vast majority of cases dependent upon indolent habits and persistent over-eating and drinking, it is equally true that a small proportion of such cases unmistakably originate or are aggravated through depressed nervous or emotional causes. There is in my experience no special dissimilarity of symptoms between the ordinary gouty or lithæmic patient and the one where the lithæmia depends upon nervous influences; but between the latter condition and neurasthenia there do exist points of diagnosis which, while easily overlooked, are yet quite positively distinguishing.

Upon this subject I claim the right to speak with some authority, since for many years I have had the advantage or disadvantage—depending upon the point of view—of studying the lithæmic state clinically in my own person.

I believe in the term neurasthenia, and in the reality and frequency of the neurasthenic state, but I do sincerely deplore the frequency and persistency with which, by both patient and physician, disorders of the metabolic function of the liver are mistaken for functional nervous disorders, or for malaria, that other easy refuge for ignorance or carelessness.

According to my own experience, one of the most common and distinctive points of differential diagnosis between lithæmia and neurasthenia is the difference in the character of the mental phenomena.

Both the lithæmic and neurasthenic suffer from mental depression and a profound sense of misery, more marked, indeed, in the former than in the latter condition.

While, however, the neurasthenic may suffer from the deepest melancholy and imagine himself heir to a thousand ills, he becomes the victim, as a rule, of no such irritability and unreasonable outbursts of temper as the man whose brain is actually poisoned by the imperfectly transformed products of digestion.

The neurasthenic may be at times extremely irritable, but this irritability is more passive than active, and any ebullition of angry feeling is quite evanescent. His demeanor is as a rule quiet, and there is but little manifest tendency to make those dependent upon him miserable by his words and actions.

The touchy mood of lithæmia, on the contrary, may last for days or weeks.

It is due to actual toxæmia, is often, if not generally, accompanied by obstinate constipation, and may be temporarily relieved by a cholagogue cathartic. In neurasthenia, again, cold hands and feet are not by any means the rule; but in intestinal and liver derangements the nitrogenized wastes circulating in the blood cause by their irritation tonic spasm of the arterioles, resulting in the cold hands and feet so bitterly complained of by the sufferers from lithæmia.

The condition of the tongue is an important diagnostic aid.

In lithæmia it is coated far more frequently and to a greater extent than in neurasthenia, but in some cases of lithæmia the tongue is but slightly affected. It may at first sight appear perfectly normal, and it is only when looked at carefully from the side that an unnatural brownish color is observed. As regards the pulse, it may be said that in lithæmia it is slow rather than fast, and in neurasthenia fast rather than slow.

In neurasthenia the oxalates are frequently found in abundance, while in lithæmia the lithates are often freely deposited.

These observations, especially as they relate to lithæmia, have been suggested not because I believe that nervous agencies are the most important factors in the production of visceral disturbances. The preponderating influences in the causation of such conditions are undoubtedly vicious methods of living. How we live, how and what we eat and drink, and the hygienic influences of exercise in the open air will in great measure determine the functional activity of the great excretory and secretory organs, as well as the stability and strength of the nervous system itself. It is not always the simplest thing to diagnose correctly and at a first interview between a purely functional disease of the nervous system and disorders of the biliary and metabolic function of the liver. The lines of

treatment for the two conditions diverge about as abruptly as for any two pathological conditions in the whole category of disease, and it must have been within the experience of every member of this society to have seen cases of such mistaken diagnosis that involved mistaken treatment and misery unnecessarily prolonged.

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